

SECTION 07410 – ALUMINUM COMPOSITE PANELS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Metal wall panels with concealed fasteners.
- B. Related Sections include the following:
 - 1. Division 5 Section "Structural Steel" for structural-steel framing.
 - 2. Division 5 Section "Cold-Formed Metal Framing" for metal studs, bracing, anchorage, and framing accessories.
 - 3. Division 6 Section "Rough Carpentry" for wood sheathing.
 - 4. Division 7 Section "Sheet Metal Flashing and Trim" for metal flashing and trim not part of this Work.
 - 5. Division 7 Section "Joint Sealants" for field-applied sealants.

1.3 PERFORMANCE REQUIREMENTS

- A. General: Provide manufactured wall panel assemblies complying with performance requirements indicated and capable of withstanding structural movement, thermally induced movement, and exposure to weather without failure or infiltration of water into the assembly.

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- B. Air Infiltration: Provide manufactured wall panel assemblies with permanent resistance to air leakage through assembly of not more than 0.09 cfm/sq. ft. (0.45 L/s/sq. m) of fixed wall area when tested according to ASTM E 283 at a static-air-pressure difference of 4.0 lbf/sq. ft. (192 Pa).
 - C. Water Penetration: Provide manufactured wall panel assemblies with no water penetration as defined in the test method when tested according to ASTM E 331 at a minimum differential pressure of 20 percent of inward acting, wind-load design pressure of not less than 6.24 lb/sq. ft. (300 Pa) and not more than 12.0 lb/sq. ft. (575 Pa).
 - D. Structural Performance: Provide manufactured wall panel assemblies capable of withstanding design wind loads indicated under in-service conditions with deflection no greater than the following, based on testing manufacturer's standard units according to ASTM E 330 by a qualified independent testing and inspecting agency.
 - 1. Maximum Deflection: 1/140 of the span.

1.4 SUBMITTALS

- A. Product Data: Include manufacturer's product specifications, standard details, certified product test results, and general recommendations, as applicable to materials and finishes for each component and for total panel assemblies.
- B. Shop Drawings: Show layouts of panels, details of corner conditions, joints, panel profiles, supports, anchorage, trim, flashing, closures, and special details. Distinguish between factory- and field-assembled work.
- C. Samples for Verification: Provide sample panels 12 inches (300 mm) long by actual panel width, in the profile, style, color, and texture indicated. Include clips, caps, battens, fasteners, closures, and other exposed panel accessories.
- D. Qualification Data: For firms and persons specified in the "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of com-

pleted projects with project names and addresses, names and addresses of architects and owners, and other information specified.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experienced installer who has completed metal wall panel projects similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver panels and other components so they will not be damaged or deformed. Package panels for protection against damage during transportation or handling.
- B. Handling: Exercise care in unloading, storing, and erecting wall panels to prevent bending, warping, twisting, and surface damage.
- C. Stack materials on platforms or pallets, covered with tarpaulins or other suitable weathertight and ventilated covering. Store panels to ensure dryness. Do not store panels in contact with other materials that might cause staining, denting, or other surface damage.

1.7 PROJECT CONDITIONS

- A. Field Measurements: Verify location of structural members and openings in substrates by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

1.8 WARRANTY

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- A. General Warranty: Special warranties specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents.
 - B. Special Finish Warranty: Submit a written warranty, signed by manufacturer, covering failure of the factory-applied exterior finish on metal wall panels within the specified warranty period and agreeing to repair finish or replace wall panels that show evidence of finish deterioration. Deterioration of finish includes, but is not limited to, color fade, chalking, cracking, peeling, and loss of film integrity.
 - C. Finish Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering metal panels that may be incorporated into the Work include, but are not limited to:
 - 1. Aluminum Composite Wall Panels:
 - a. Alucobond, Alusuisse Composites, Inc.
 - b. Citadel Architectural Products, Inc.
 - c. Una-Clad, Copper Sales, Inc.

2.2 METALS AND FINISHES

- A. Aluminum Sheet Pre-painted with Coil Coating: Aluminum sheet complying with **ASTM B 209** (**ASTM B 209M**) for alclad alloy 3003 or 3004, with temper as required to suit forming operations, pre-painted by the coil-coating process and complying with the following requirements:

1. Surface: Smooth, flat, mill finish.
2. Alternative alloys include 1100; alclad 3003, 3004, 3105, 5005, and 5050; in A14, H14, H24, H32, or H34 temper.
3. Exposed Finish for Exterior Panels: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations relative to applying and designating finishes. Prepare, pre-treat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturer's written instructions.
 - a. Fluoropolymer 2-Coat Coating System: Manufacturer's standard 2-coat, thermocured system composed of specially formulated inhibitive primer and fluoropolymer color topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight; complying with AAMA 1402, Test Method No. 7.
 - 1) Color and Gloss: As indicated by manufacturer's color and gloss designations to match Texas Sage by Citadel Architectural Products.
4. Prime Coat for Concealed Surfaces: Apply pretreatment and white or light-colored, baked-on polyester primer coat; with a minimum dry film thickness of 0.2 mil (0.005 mm).

2.3 WALL PANEL ASSEMBLIES

- A. Exterior Wall Panels: Fabricate panel face sheets to the profile or configuration indicated; and of the material, finish, and thickness indicated. Design joints between panels to form weathertight seals.
- B. Composite Wall Panels: Fabricate panels in a manner that will eliminate condensation on the interior side. Design joints between panels to form weathertight seals.
 1. Provide factory-assembled, wall panel units consisting of a specified core material laminated or otherwise securely bonded to metal interior and exterior face sheets.

- a. Interior Face Sheet: 0.032-inch- (0.8-mm-) thick, smooth-surface aluminum sheets with organic coating finish, unless otherwise indicated.

2.4 CORE MATERIALS

- A. Composite Core: Thermoset phenolic resin core bonded to aluminum skins.

2.5 MISCELLANEOUS MATERIALS

- A. Fasteners: Concealed self-tapping screws, bolts, nuts, self-locking rivets and bolts, end-welded studs, and other suitable fasteners designed to withstand design loads.
 - 1. Use aluminum or stainless-steel fasteners.
- B. Accessories: Unless otherwise specified, provide components required for a complete wall panel assembly including trim, copings, fasciae, mullions, sills, corner units, clips, seam covers, flashing, sealants, gaskets, fillers, closure strips, and similar items. Match materials and finishes of panels.
 - 1. Closure Strips: Closed-cell, self-extinguishing, expanded, cellular, rubber or cross-linked, polyolefin-foam flexible closure strips. Cut or pre-mold to match configuration of panels. Provide closure strips where indicated or necessary to ensure weathertight construction.
 - 2. Sealing Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealing tape with release paper backing. Provide permanently elastic, non-sag, nontoxic, nonstaining tape.
 - 3. Joint Sealant: One-part elastomeric polyurethane, polysulfide, or silicone-rubber sealant as recommended by panel manufacturer.

2.6 FABRICATION

- A. General: Fabricate and finish panels and accessories at the factory to greatest extent possible, by manufacturer's standard procedures and processes, as



necessary to fulfill indicated performance requirements demonstrated by laboratory testing. Comply with indicated profiles and with dimensional and structural requirements.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements indicated for conditions affecting performance of metal panel walls.
 - 1. Panel Supports and Anchorage: Examine wall framing to verify that secondary structural panel support members and anchorage have been installed to meet requirements of panel manufacturer.
 - 2. Do not proceed with wall panel installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Coordinate metal wall panels with rain drainage work; flashing; trim; and construction of roofing, parapets, walls, and other adjoining work to provide a leak-proof, secure, and non-corrosive installation.
- B. Promptly remove protective film, if any, from exposed surfaces of metal panels. Strip with care to avoid damage to finish.

3.3 PANEL INSTALLATION

- A. General: Comply with panel manufacturer's written instructions and recommendations for installation, as applicable to project conditions and supporting



substrates. Anchor panels and other components of the Work securely in place, with provisions for thermal and structural movement.

1. Field cutting exterior panels by torch is not permitted.
2. Install panels with concealed fasteners.

B. Accessories: Install components required for a complete wall panel assembly including trim, copings, fasciae, mullions, sills, corner units, clips, seam covers, flashing, sealants, gaskets, fillers, closure strips, and similar items.

C. Joint Sealers: Install gaskets, joint fillers, and sealants where indicated and where required for weatherproof performance of wall panel assemblies. Provide types of gaskets, fillers, and sealants indicated or, if not otherwise indicated, types recommended by panel manufacturer.

1. Install weatherseal to prevent air and moisture penetration. Flash and seal panels at ends and intersections with other materials with rubber, neoprene, or other closures to exclude weather.
2. Seal panel end laps with a bead of tape or sealant, full width of panel. Seal side joints where recommended by panel manufacturer.

D. Separate dissimilar metals by painting each metal surface in area of contact with a bituminous coating or by other permanent separation as recommended by manufacturers of dissimilar metals.

E. Installation Tolerances: Shim and align panel units within installed tolerance of **1/4 inch in 20 feet (6 mm in 6 m)** on level, plumb, and location lines as indicated and within **1/8-inch (3-mm)** offset of adjoining faces and of alignment of matching profiles.

3.4 CLEANING AND PROTECTING

A. Damaged Units: Replace panels and other components of the Work that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

- B. Cleaning: Remove temporary protective coverings and strippable films, if any, as soon as each panel is installed. On completion of panel installation, clean finished surfaces as recommended by panel manufacturer and maintain in a clean condition during construction.

END OF SECTION 07410

